Author(s)/participant(s): Loretta Metz, Maxine Rasmussen, Jon Siddoway
Contact for lead author: Area Rangeland Management Specialist, Glasgow Area Office, MT **Reference site used?** No
Date: 05/04/05 **MLRA:** 52XC **Ecological Site:** Shallow Clay 10-14" p.z. This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

Indicators. For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above- and below-average years for **each** community within the reference state (when appropriate), and (3) cite data. Continue descriptions on separate sheet if needed. **Weight factors** are either 0.5, 1.0 or 2.0. The default factor is 1.0. A maximum of 8 indicators may be changed to 0.5 or 2.0. The rest remain at 1.0.	**Wgt. Factor**
1. Number and extent of rills: Rills should not be present in HCPC or in plant community A. In plant community B, rills would be visible, ½ inch deep or more, linear, rarely exceeding 1 foot in length. Distance between rills is irregular.	1.0
2. Presence of water flow patterns: Water flow patterns should not be present in HCPC or in plant community A. In plant community B, water flow patterns would be visible as long (more than 1feet) and continuous across the landscape.	1.0
3. Number and height of erosional pedestals or terracettes: Pedestals or terracettes would essentially be nonexistent in HCPC. If in plant community A, careful examination yields occasional pedestals and terracettes approximately ¼ inch above the soil surface. If in plant community B, pedestals and terracettes are frequent and ½ - ¾ inch above the soil surface.	1.0
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are *not* bare ground): 5-10% of the soil surface could be bare in HCPC and in plant community A. If in plant community B, 10-20% of the soil surface can be exposed.	1.0
5. Number of gullies and erosion associated with gullies: None.	1.0
6. Extent of wind scoured, blowouts and/or depositional areas: None.	1.0
7. Amount of litter movement (describe size and distance expected to travel): Litter movement is not expected with HCPC and plant community A. In plant community B, litter movement of both fine and coarse plant matter is visible into depressions or against natural obstacles.	1.0
8. Soil surface (top few mm) resistance to erosion (stability values are averages – most sites will show a range of values for both plant canopy and interspaces, if different): Stability class anticipated to be 5 or 6 in HCPC and in plant community A. Stability class would decrease to 4 in plant community B.	1.0
9. Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different): The surface layer is usually 0-4" deep and typically have clay, clay loam, and silty clay textures. Surface color ranges from light brownish gray to dark grayish brown. Soil organic matter ranges from 0.5 – 2%	1.0
10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: In HCPC and Plant community A, 50-60% plant canopy and 65-90% basal cover with small gaps between plants should reduce raindrop impact and slow overland flow, providing increased time for infiltration to occur. Healthy, deep rooted native grasses enhance infiltration and reduce runoff. Infiltration rate is very slow. If in plant community B, 30-40% plant canopy and 65-80% basal cover with large gaps between plants, amplifies raindrop impact and increases overland flow. The site tends to be more xeric as runoff increases.	1.0
11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): No compaction layer should be evident in any of the State 1 plant communities. Clay shale bedrock begins at 10 to 20 inches below the surface.	1.0
12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: >>, >, = to indicate much greater than, greater than, and equal to): HCPC: Tall cool season bunch grasses > mid-stature, cool season rhizomatous grasses> short stature, warm season rhizomatous grasses> forbs > shrubs. **Plant community A**: Tall cool season bunch grasses = mid-stature, cool season rhizomatous grasses> short stature, warm season rhizomatous grasses> forbs > shrubs. **Plant community B**: Short warm season rhizomatous grasses = short cool season bunch grasses > mid-stature, cool season rhizomatous grasses > forbs > shrubs.	1.0
13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): Plant mortality and decadence very low in all state 1 reference plant communities. In periods of drought, shrubs would exhibit decadence in the state 1 reference communities	1.0
14. Average percent litter cover (50-60%) and depth (0.25-0.50 inches): Litter cover is in contact with soil surface. Litter decreases in Plant community B to 30-40% and depth is immeasurable.	1.0
15. Expected annual production (this is TOTAL above-ground production, not just forage production): 600 - 1100 #/acre.	1.0
16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "will continue to increase regardless of the management of the site" and may eventually dominate the site: Blue grama, prairie junegrass, needleleaf sedge, plains prickly pear, broom snakeweed.	1.0
17. Perennial plant reproductive capability: All species have a somewhat restricted ability to reproduce in HCPC and Plant community A. In Plant community B, plant seedlings will be weighed in favor of marginal and undesirable species. Replacement of desirable species will be very few.	1.0